

Trend Study 19B-1-02

Study site name: Sabie Mountain.

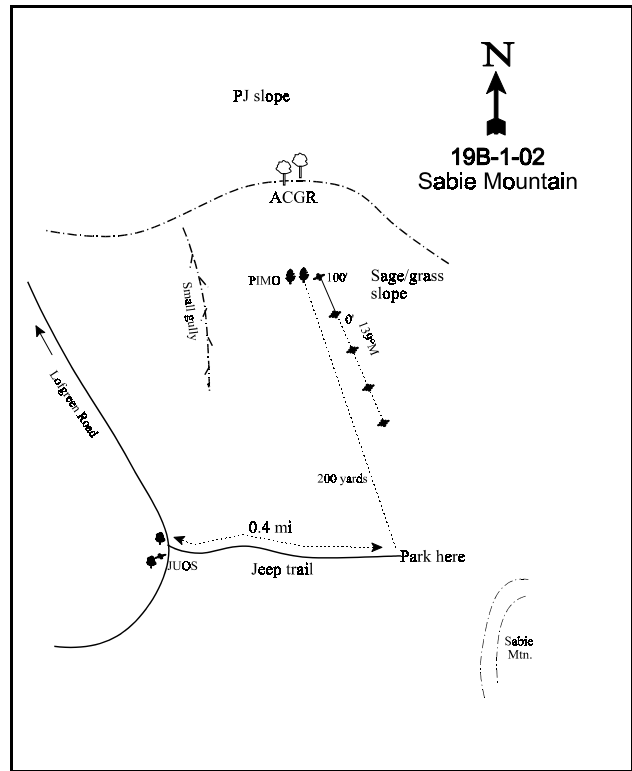
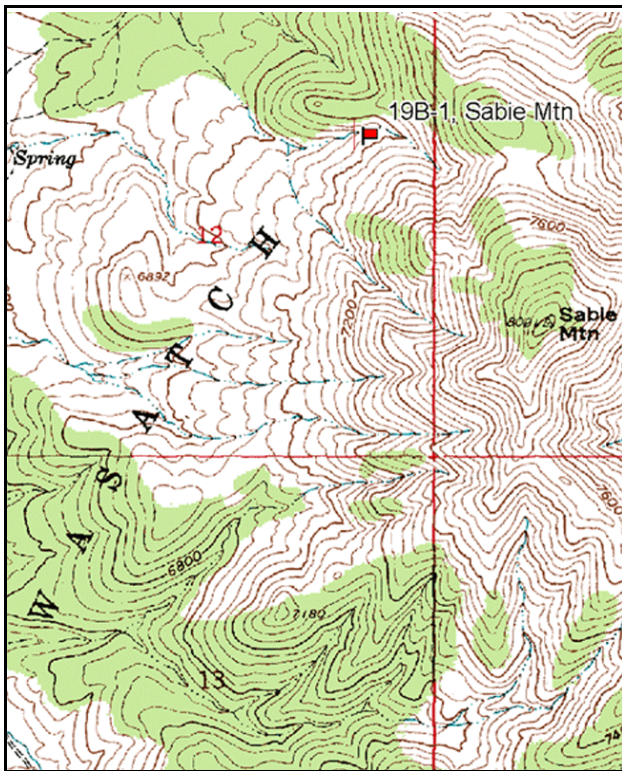
Vegetation type: Big Sagebrush-Grass.

Compass bearing: frequency baseline 319 degrees magnetic. (Lines 2-4 @ 139°M)

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft). Rebar: belt 3 on 2ft.

LOCATION DESCRIPTION

(Alternate route on road #577). Just north of Vernon Reservoir, turn east on Forest Service road # 038 towards Lofgreen. Go just over 1 mile and turn right onto a dirt road into a chaining. Proceed 1.4 miles to a gate. Continue 0.5 miles to an intersection. Turn left (east) and follow this road 0.4 miles across a seeding to where the road bends sharply to the right. There is an old jeep trail on the left and two junipers with a short green fencepost between them on the right. The study site can be reached from here by hiking about 0.5 miles northeast up the small drainage to a clump of maples in the wash bottom. From the largest maple tree, walk up the hill 30 paces bearing 136 degrees to the end of the baseline. The 0-foot stake is marked by browse tag #418.



Map Name: Sabie Mountain

Diagrammatic Sketch

Township 10S, Range 5W, Section 12

GPS: NAD 27, UTM 12S 4425367 N 384835 E

DISCUSSION

Sabie Mountain - Trend Study No. 19B-1

This trend study is located on the northwest slope of Sabie Mountain on land administered by the Uinta National Forest. It is within deer summer range at an elevation of 7,000 feet. Aspect is northwest with a 35% slope. The range type is mountain big sagebrush-grass, with strong elements of mountain snowberry, stickyleaf low rabbitbrush, and Oregon grape. The area had a diverse and productive herbaceous understory in the past, but much less so in 2002 due to the drought. A pellet group transect read on site in 1997 estimated 7 deer days use/acre (17 ddu/ha) and 14 cow days use/acre (35 cdu/ha) in the area. Pellet group transect data taken in 2002 estimated 19 deer days use/acre (46 ddu/ha) and 5 cow days use/acre (13 cdu/ha). Most of the deer pellets in 2002 appeared to be from late spring and early summer, while all of the cow pats were from the previous summer.

Soil is weathered in place from igneous parent material with many angular granite or feldspar rocks on the surface. Color is medium dark with an estimated organic matter content of 4.7%. Soil textural and chemical analysis indicates a loam to clay loam that is slightly acidic in reactivity (pH of 6.3). Effective rooting depth was estimated at 13 inches. Average soil temperature was 52.8°F at 15 inches in 1997. As reported in 1983, some past erosion is apparent, evidenced by a few gullies in the vicinity. Percent bare ground declined from a high of 27% in 1983 to 5% in 1997. With drought conditions in 2002, bare ground increased to 16%. The distribution of vegetation and litter cover continues to prevent accelerated erosion in most places. Pocket gophers were reportedly active throughout the area and were a source of significant soil disturbance in 1983. This has not been reported in any other year. The erosion condition class was determined as stable in 2002.

In 1997, a greatly increased sample size was used to more accurately represent the browse populations in the area. The baseline was extended to estimate browse density, whereas the previous surveys sampled browse about 150-200 feet to the west, in an area with a thinner and less representative stand of mountain big sagebrush. Mountain big sagebrush density was estimated to be 4,220 plants/acre in 1997, slightly increasing to 4,580 plants/acre in 2002. The latter two estimates are more than double those of 1983 and 1989. The age structure is relatively similar between 1989 and 2002 with about 70% of the population being mature. The remainder being composed mostly of decadent individuals. In 1997, it was reported that an indicator of possible losses to the population was that 55% of the decadent plants were classified as dying. The population remained stable and only 8% of the decadent plants were classified as dying in 2002. The number of seedling and young sagebrush have been low in all years. Utilization on mountain big sagebrush has been mostly light to moderate in all samples. Vigor has returned to normal since the 1989 reading when about one-third of the population showed poor vigor. Mountain big sagebrush had an estimated total canopy cover value of 23% in 2002. Crickets were abundant on the site in 2002 and had noticeably eaten many sagebrush leaves. Annual leader growth averaged 1.2 inches in 2002.

Saskatoon serviceberry had an estimated density of just under 300 plants/acre on the site in 1997 and 2002. This species has shown moderate to heavy utilization in all readings, but mostly normal vigor since 1983 when the entire population displayed poor vigor. Serviceberry plants have a stunted growth form due to heavy use. Mountain snowberry is the most abundant browse by density with an estimated 8,360 plants/acre in 2002. This species has a mostly mature population with few young in 1997 and 2002. Snowberry plants are also small averaging only one foot in height by 1½ feet in width in 1997 and 2002. Use has been mostly light on snowberry in all readings. Crickets were also observed to be feeding on snowberry in 2002. Other browse sampled on the site include stickyleaf low rabbitbrush, Oregon grape, and Wood's rose. Single-needle pinyon and Utah juniper are scattered throughout the area at an estimated density of 22 juniper and 51 pinyon trees/acre.

The herbaceous understory was moderately abundant in the past and provided 40% of the vegetation cover on the site in 1997. However, herbaceous plants, especially forbs, drastically declined in 2002 with drought. Mutton bluegrass has been the most abundant grass on the site during all readings. It provided 68% of the total grass cover in 1997, increasing to 81% in 2002. It significantly declined in nested frequency in 2002, but

remains at a the same level as 1983 estimates. Other important perennial grasses that occur on the site in low frequencies are bluebunch wheatgrass and Sandberg bluegrass. Both of these species declined in nested frequency between 1997 and 2002, although neither decrease was significant. A variety of other grasses are found scattered throughout the site including oniongrass, spike fescue, bottlebrush squirreltail, basin wildrye, and bulbous bluegrass. Average cover of grasses declined from 11% in 1997 to 5% in 2002.

Forbs are important to wildlife on this summer/transitional range. Composition was diverse and productive between 1983 and 1997. The drought conditions in 2002 had a drastic impact on the forb component. Sum of nested frequency for perennial forbs declined by 75%, and cover decreased from 13% to 3% between 1997 and 2002. Crickets had also heavily utilized many of the forbs on site in 2002. The most abundant species include bastard toadflax, one-flower helianthella, and mulesears wyethia.

1983 APPARENT TREND ASSESSMENT

Some soil movement is apparent as evidenced by sheet erosion, relatively high amounts of erosion pavement, and small gullies in the area. Large scale sheet erosion, however, is not a problem because of the abundant vegetation and litter cover. The three principal browse species, mountain big sagebrush, mountain snowberry, and Saskatoon serviceberry, are each healthy and productive. The herbaceous understory appears stable.

1989 TREND ASSESSMENT

Percent bare ground decreased from 27% in 1983 to 11% in 1989. Localized erosion continues, but most of the gullies in the area show signs of healing with vegetated sides and bottoms. The soil trend is upward. Except for a slight decline in Saskatoon serviceberry density, the browse trend remains stable with a variety of browse available. The herbaceous understory trend is stable with a slight increase in herbaceous understory sum of nested frequency.

TREND ASSESSMENT

soil - up (5)

browse - stable (3)

herbaceous understory - stable (3)

1997 TREND ASSESSMENT

The soil trend continues to improve with a decrease in percent bare ground. There is ample vegetation and litter to keep erosion to a minimum. The soil trend is slightly up. The data indicates that serviceberry and snowberry have stable populations. The key browse species, mountain big sagebrush, provides 62% of the total browse cover on the site. Realizing that the population estimate is much larger in 1997, this increase is due almost entirely to the larger sampling design. The trend for mountain big sagebrush is slightly down. To better understand the sagebrush trend for this site, it is much better to look at the distribution of the different classes of plants within the population. For example, the dead to live ratio is 1:6, or about 15% are dead (720 plants/acre). This may continue as 55% of the decadent plants were classified as dying, meaning that 583 plants/acre could be added to the dead population very soon. Also, it should be noted that percent decadence has steadily increased through the years, 15%, 21% and 25% in 1997. Mountain big sagebrush canopy cover is relatively high (23%) and is likely affecting herbaceous understory production. Perennial grass sum of nested frequency has not varied much through the years. The grass trend would be considered stable. Perennial forbs have shown much more variation in their sum of nested frequency values between years, declining by 45% in 1997. The forb trend is downward. Because forbs make up 54% of the herbaceous understory cover, the overall trend for the herbaceous understory would be slightly downward.

TREND ASSESSMENT

soil - slightly up (4)

browse - slightly down (2)

herbaceous understory - slightly down (2)

2002 TREND ASSESSMENT

Trend for soil is down due to drought conditions. Bare ground increased from 5% to 16%, litter cover declined from 57% to 45%, sum of nested frequency for perennial grasses and forbs declined by 55%, and herbaceous cover declined from 24% to 8%. Trend for browse is stable. Mountain big sagebrush slightly increased in density and shows improved vigor. Recruitment remains low, but the proportion of the decadent age class classified as dying declined from 55% in 1997 to only 8% in 2002. The herbaceous understory has a downward trend. Drought conditions in 2002 caused a drastic decline in the abundance of perennial herbaceous plants, especially forbs. The nested frequency of all perennial forbs declined by 75%. What was once a diverse and productive forb component, is currently sparse and heavily utilized by crickets. Better precipitation in the future should reverse these trends.

TREND ASSESSMENT

soil - down (1)

browse - stable (3)

herbaceous understory - down (1)

HERBACEOUS TRENDS --

Herd unit 19B, Study no: 1

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'97	'02	'83	'89	'97	'02	'97	'02
G	Agropyron spicatum	_a 59	_b 93	_{ab} 53	_a 38	20	34	21	16	1.65	.47
G	Agropyron trachycaulum	9	5	-	-	4	3	-	-	-	-
G	Bromus marginatus	4	-	-	-	1	-	-	-	-	-
G	Elymus cinereus	-	-	3	-	-	-	2	-	.41	.03
G	Leucopoa kingii	-	3	7	4	-	1	3	2	.18	.15
G	Melica bulbosa	_{ab} 11	_b 18	_b 9	_a -	4	7	5	-	.08	-
G	Poa bulbosa	-	-	3	-	-	-	1	-	.03	-
G	Poa fendleriana	_a 200	_b 241	_b 240	_a 196	77	87	80	78	7.65	4.25
G	Poa secunda	_b 58	_a 23	_{ab} 53	_{ab} 47	24	12	19	20	1.13	.37
G	Sitanion hystrix	_b 19	_{ab} 6	_a 5	_a -	10	4	3	-	.01	-
Total for Annual Grasses		0	0	0	0	0	0	0	0	0	0
Total for Perennial Grasses		360	389	373	285	140	148	134	116	11.17	5.27
Total for Grasses		360	389	373	285	140	148	134	116	11.17	5.27
F	Agoseris glauca	_c 29	_a -	_b 11	_a -	16	-	6	-	.08	-
F	Allium spp.	_c 32	_b 10	_{ab} 5	_a -	15	5	3	-	.01	-
F	Arabis spp.	2	9	6	-	1	5	3	-	.01	-
F	Astragalus cibarius	_{bc} 20	_c 28	_{ab} 2	_a -	8	17	2	-	.01	-
F	Astragalus convallarius	_b 58	_b 70	_b 70	_a -	28	37	34	-	2.25	-
F	Balsamorhiza hookeri	_a 3	_a 2	_b 19	_{ab} 16	1	2	10	7	.66	.42
F	Balsamorhiza sagittata	_{bc} 30	_c 44	_a 12	_{ab} 13	15	24	6	7	.66	.45
F	Castilleja linariaefolia	1	4	-	-	1	2	-	-	-	-
F	Calochortus nuttallii	1	3	-	-	1	2	-	-	-	-
F	Cirsium neomexicanum	_{ab} 14	_b 14	_a 2	_a -	6	11	2	-	.03	-

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'83	'89	'97	'02	'83	'89	'97	'02	'97	'02
F	<i>Comandra pallida</i>	_{ab} 46	_a 42	_b 66	_{ab} 51	19	21	34	25	.90	1.02
F	<i>Collinsia parviflora</i> (a)	-	-	_b 22	_a -	-	-	10	-	.07	-
F	<i>Crepis acuminata</i>	_c 155	_d 222	_b 59	_a -	67	83	34	-	.74	-
F	<i>Delphinium nuttallianum</i>	-	3	9	-	-	1	4	-	.02	-
F	<i>Erigeron eatonii</i>	_a -	_b 29	_a 4	_a -	-	14	2	-	.01	-
F	<i>Eriogonum racemosum</i>	_{ab} 20	_b 27	_{ab} 21	_a 6	10	12	11	2	.28	.03
F	<i>Eriogonum umbellatum</i>	4	3	10	4	4	2	6	2	.29	.03
F	<i>Fritillaria atropurpurea</i>	-	3	1	-	-	1	1	-	.00	-
F	<i>Helianthella uniflora</i>	_b 92	_b 114	_a 63	_a 37	46	47	31	20	2.52	.59
F	<i>Hydrophyllum capitatum</i>	-	4	-	-	-	2	-	-	-	-
F	<i>Lithospermum ruderales</i>	4	2	4	10	2	1	2	4	.03	.21
F	<i>Lomatium grayi</i>	_{ab} 8	_b 17	_a 4	_a -	3	8	2	-	.04	-
F	<i>Lupinus argenteus</i>	_a 5	_a 2	_b 69	_a -	2	1	32	-	2.37	-
F	<i>Machaeranthera canescens</i>	_c 26	_c 33	_b 7	_a -	13	15	5	-	.02	-
F	<i>Mertensia oblongifolia</i>	_a -	_b 15	_a -	_a -	-	8	-	-	-	-
F	<i>Microsteris gracilis</i> (a)	-	-	3	-	-	-	1	-	.00	-
F	<i>Orobancha fasciculata</i>	-	1	-	-	-	1	-	-	-	-
F	<i>Penstemon subglaber</i>	10	5	5	-	4	2	3	-	.01	-
F	<i>Phlox longifolia</i>	_b 80	_c 124	_b 72	_a 2	35	54	36	1	.37	.00
F	<i>Polygonum douglasii</i> (a)	-	-	6	-	-	-	2	-	.01	-
F	<i>Senecio integerrimus</i>	_a -	_{ab} 3	_b 14	_a -	-	2	6	-	.22	-
F	<i>Senecio multilobatus</i>	-	-	6	-	-	-	5	-	.06	-
F	<i>Taraxacum officinale</i>	-	-	1	1	-	-	1	1	.00	.03
F	<i>Tragopogon dubius</i>	4	-	-	-	3	-	-	-	-	-
F	<i>Vicia americana</i>	_c 199	_c 191	_b 17	_a -	75	76	7	-	.13	-
F	<i>Wyethia amplexicaulis</i>	_b 28	_b 28	_b 23	_a 5	12	13	12	3	1.06	.21
F	<i>Zigadenus paniculatus</i>	_b 10	_a 1	_a -	_a -	6	1	-	-	-	-
Total for Annual Forbs		0	0	31	0	0	0	13	0	0.09	0
Total for Perennial Forbs		881	1053	582	145	393	470	300	72	12.88	3.02
Total for Forbs		881	1053	613	145	393	470	313	72	12.97	3.02

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Herd unit 19B, Study no: 1

Type	Species	Strip Frequency		Average Cover %	
		'97	'02	'97	'02
B	Amelanchier alnifolia	11	11	.15	.06
B	Artemisia tridentata vaseyana	91	93	22.50	25.46
B	Chrysothamnus viscidiflorus viscidiflorus	55	25	1.48	.37
B	Juniperus osteosperma	3	3	.53	.63
B	Mahonia repens	22	8	1.11	.06
B	Pinus monophylla	1	1	-	1.48
B	Rosa woodsii	22	26	.98	1.35
B	Symphoricarpos oreophilus	82	75	9.67	11.79
Total for Browse		287	242	36.43	41.22

CANOPY COVER -- LINE INTERCEPT

Herd unit 19B, Study no: 1

Species	Percent Cover	
	'97	'02
Amelanchier alnifolia	-	.25
Artemisia tridentata vaseyana	-	23.08
Chrysothamnus viscidiflorus viscidiflorus	-	.33
Juniperus osteosperma	-	.58
Mahonia repens	-	.07
Pinus monophylla	-	1.00
Rosa woodsii	-	.33
Symphoricarpos oreophilus	-	11.33

Key Browse Annual Leader Growth

Herd unit 19B , Study no: 1

Species	Average leader growth (in) '02
Artemisia tridentata vaseyana	1.2

Point-Quarter Tree Data

Herd unit 19B , Study no: 1

Species	Trees per Acre		Average diameter (in)	
	'97	'02	'97	'02
Juniperus osteosperma	9	22	2.1	1.4
Pinus monophylla	26	51	1.9	1.6

BASIC COVER --

Herd unit 19B, Study no: 1

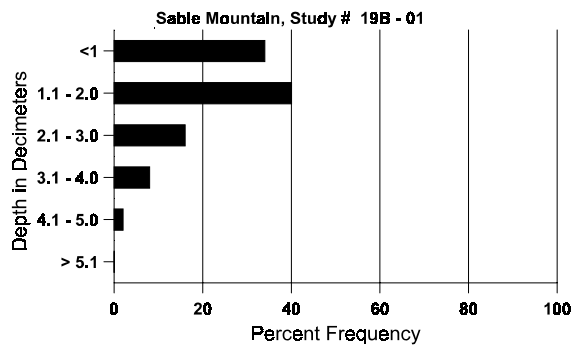
Cover Type	Nested Frequency		Average Cover %			
	'97	'02	'83	'89	'97	'02
Vegetation	344	299	3.50	9.75	52.32	47.79
Rock	176	240	12.50	8.75	5.75	7.86
Pavement	219	292	5.00	11.50	5.65	6.34
Litter	396	385	51.75	58.50	57.13	44.81
Cryptogams	8	7	.25	.25	.04	.10
Bare Ground	199	233	27.00	11.25	5.33	16.31

SOIL ANALYSIS DATA --

Herd Unit 19B, Study no: 1, Sabie Mountain

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
13.0	52.8 (15.3)	6.3	30.6	41.8	27.6	4.7	10.1	275.2	1.0

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 19B, Study no: 1

Type	Quadrat Frequency		Pellet Transect			
	'97	'02	Pellet Groups per Acre		Days Use per Acre (ha)	
	'97	'02	'97	'02	'97	'02
Rabbit	6	1	-	-	-	-
Elk	1	-	-	-	-	-
Deer	8	8	87	244	7 (17)	19 (46)
Cattle	-	1	165	61	14 (34)	5 (13)

BROWSE CHARACTERISTICS --

Herd unit 19B, Study no: 1

Field Unit 19D, Study No. 1																		
A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier alnifolia																		
Y	'83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	'89	-	-	2	-	-	-	-	-	-	-	2	-	-	133			2
	'97	5	1	-	-	-	-	-	-	-	-	6	-	-	120			6
	'02	-	1	-	-	-	-	-	-	-	-	1	-	-	20			1
M	'83	-	1	1	-	-	-	-	-	-	-	-	-	2	133	20	3	2
	'89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'97	1	1	-	3	-	1	-	-	-	-	5	-	1	120	19	18	6
	'02	-	2	2	-	-	-	-	-	-	-	4	-	-	80	14	22	4
D	'83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	'89	-	1	-	-	-	-	-	-	-	-	1	-	-	66			1
	'97	-	2	-	-	-	-	-	-	-	-	2	-	-	40			2
	'02	1	1	5	-	-	-	-	-	-	-	7	-	-	140			7
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'83			50%			50%			+33%							
		'89			33%			67%			+29%							
		'97			29%			07%			-14%							
		'02			33%			58%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'83	133	Dec:		0%		
												'89	199			33%		
												'97	280			14%		
												'02	240			58%		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	3	-	-	-	-	-	1	-	-	4	-	-	-	80		4	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	02	1	-	1	-	-	-	-	-	-	2	-	-	-	40		2	
M	83	17	6	-	-	-	-	-	-	-	18	5	-	-	1533	22	20	
	89	15	5	-	-	-	-	-	-	-	10	3	7	-	1333	26	30	
	97	118	33	2	2	-	-	-	-	-	154	-	1	-	3100	26	32	
	02	109	8	50	-	-	-	-	-	-	165	2	-	-	3340	25	35	
D	83	2	2	-	-	-	-	-	-	-	3	1	-	-	266		4	
	89	5	1	-	-	-	-	-	-	-	3	1	2	-	400		6	
	97	44	9	-	-	-	-	-	-	-	24	-	-	29	1060		53	
	02	50	2	5	-	-	-	3	-	-	55	-	-	5	1200		60	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	720		36	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	660		33	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>						<u>%Change</u>				
'83		30%			00%			00%						+ 4%				
'89		21%			00%			32%						+56%				
'97		20%			.94%			14%						+ 8%				
'02		04%			24%			02%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	1799	Dec:	15%			
												'89	1866		21%			
												'97	4220		25%			
												'02	4580		26%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	23	-	-	-	-	-	-	-	-	23	-	-	-	1533		23	
	97	10	-	-	-	-	-	-	-	-	10	-	-	-	200		10	
	02	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
M	83	55	-	-	-	-	-	-	-	-	55	-	-	-	3666	8	8	
	89	30	-	-	2	-	-	-	-	-	28	1	3	-	2133	18	18	
	97	82	-	-	25	-	-	8	-	-	113	2	-	-	2300	13	12	
	02	10	-	-	-	-	-	-	-	-	10	-	-	-	200	5	7	
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	8	2	-	-	-	-	-	-	-	10	-	-	-	666		10	
	97	7	-	-	-	-	-	-	-	-	2	-	-	5	140		7	
	02	13	2	5	4	-	-	5	-	-	19	-	-	10	580		29	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%			+15%							
'89		03%			00%			05%			-39%							
'97		00%			00%			04%			-70%							
'02		05%			13%			25%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	3666	Dec:	0%			
												'89	4332		15%			
												'97	2640		5%			
												'02	800		73%			
Eriogonum microthecum																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	2	1	-	-	-	-	-	-	-	1	-	2	-	200		3	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		33%			00%			67%										
'97		00%			00%			00%										
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	200		-			
												'97	0		-			
												'02	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Juniperus osteosperma																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	3	-	-	-	-	-	-	-	-	-	-	-	-	60		3	
	02	2	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	02	2	-	-	-	-	-	-	-	-	-	-	-	-	40	-	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%			+25%							
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	60		-			
												'02	80		-			
Mahonia repens																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	8	-	-	3	-	-	-	-	-	-	-	-	-	220		11	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	110	-	-	20	-	-	-	-	-	-	-	-	-	2600	3	5	
	02	18	-	-	1	-	-	-	-	-	-	-	-	-	380	4	5	
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	2	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%			-85%							
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	0%			
												'89	0		0%			
												'97	2820		0%			
												'02	420		10%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Pinus monophylla																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	02	-	-	-	1	-	-	-	-	-	-	-	-	-	20		1	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	02	-	-	-	1	-	-	-	-	-	-	-	-	-	20	-	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%			+ 0%							
'02		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-			
												'89	0		-			
												'97	20		-			
												'02	20		-			
Rosa woodsii																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	37	-	-	5	-	-	-	-	-	-	-	-	-	840		42	
	02	16	-	-	-	-	-	-	-	-	-	-	-	-	320		16	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	97	36	-	-	13	-	-	-	-	-	-	-	-	-	980	8 10	49	
	02	46	-	-	7	-	-	-	-	-	-	-	-	-	1060	9 9	53	
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	7	-	-	1	-	-	-	-	-	-	-	-	1	160		8	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%										
'89		00%			00%			00%										
'97		00%			00%			00%			-15%							
'02		00%			00%			01%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	0%			
												'89	0		0%			
												'97	1820		0%			
												'02	1540		10%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	2	-	-	-	-	-	1	-	-	3	-	-	-	200		3	
	97	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	27	14	-	6	3	-	2	-	-	52	-	-	-	3466		52	
	97	9	-	-	4	-	-	-	-	-	13	-	-	-	260		13	
	02	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2	
M	83	99	-	-	-	-	-	-	-	-	99	-	-	-	6600	22 14	99	
	89	45	22	2	6	-	-	-	-	-	75	-	-	-	5000	18 17	75	
	97	140	-	-	96	-	-	-	-	-	236	-	-	-	4720	13 20	236	
	02	281	-	5	81	-	-	-	-	-	367	-	-	-	7340	12 17	367	
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	2	3	-	1	-	-	-	-	-	4	-	2	-	400		6	
	97	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
	02	48	-	-	1	-	-	-	-	-	47	1	-	1	980		49	
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'83		00%			00%			00%			+26%							
'89		32%			02%			02%			-43%							
'97		00%			00%			00%			+39%							
'02		00%			01%			.23%										
Total Plants/Acre (excluding Dead & Seedlings)												'83	6600	Dec:	0%			
												'89	8866		5%			
												'97	5060		2%			
												'02	8360		12%			